# REGIONAL STRATEGY FOR THE NATIONAL CLIMATE ASSESSMENT

## Overview

The immediate focus of the regional strategy for the National Climate Assessment (NCA) is to develop the necessary short-term deliverables for the 2013 report, while thoughtfully building towards achieving the strategic vision of the NCA as a sustained assessment process, including creating a timetable for intermediate products to support future synthesis assessment reports. A critical piece of this vision is creating an institutional structure where the federal programs contributing to the assessment are connected to regional interests, key decision-makers, and sources of information - preferably through existing networks. To the extent that such networks do not currently exist, the NCA should foster their development in the regions (See Figure 1 for map of the regions).

Each region should meet certain minimum requirements for the 2013 report (below), but those regions that are better positioned to produce more than the minimum requirements are strongly encouraged to advance a more comprehensive approach. The baseline approach for the 2013 report is to provide updates on the 2009 *Global Climate Change Impacts* report while also demonstrating progress towards the longer-term, more visionary set of Assessment objectives and outcomes articulated in the NCA Strategy (Appendix A) and the draft report outline (Appendix C).

The sustained NCA process will provide for ongoing submission of 'technical inputs' that both feed into an online, web-based presence and support the quadrennial reports (Figure 3). In addition, material that is produced in the region that is not available in time for the 2013 report may become part of intermediate NCA products (topical reports) of the NCA Development and Advisory Committee (NCADAC)(Figure 2). Regions should create a timetable for these technical and topical inputs that will support the release of intermediate reports by the NCADAC between the mandated formal assessments.

## Approach

The first step of this strategy is to identify assessment leadership in each region, including at least one NCADAC member, and immediately begin team-building efforts. Each "Regional Team" will then work to design implementation plans for topical products supporting the 2013 report and the broader assessment process. Central coordination will be provided by the NCA office and the NCADAC, but the Regional Teams will

Topical products are "official" products of the NCA, while technical inputs are part of the foundational reference pool, but are not published by the NCA (although they may be "published" by USGCRP agencies, academia, NGOs, etc.). The topical products will be subject to a higher level of review, as they are considered pieces of the assessment and need to meet the requirements of the Information Quality Act for "Highly Influential Documents".

exercise a large degree of autonomy. Once progress has been made towards satisfying the needs of the 2013 report, additional effort should begin to build on the existing regional capacity to create a more comprehensive approach to assessment activities in the future.

The overall regional effort will be guided by a NCADAC Regional Working Group (RWG) that will set policy, coordinate regional efforts, and encourage interaction with NCADAC working groups responsible for other aspects of the NCA report, especially sectoral and cross-sectoral analyses, to ensure fertilization of ideas and harmonization of efforts while minimizing duplication. The RWG will also be responsible for fostering a dialogue with the Regional Teams so that its work will be informed by progress achieved and challenges discovered "on the ground", and so that lessons learned in one region will be communicated to all. The Regional Team will function as "franchises" and will be co-led by a member of the NCADAC and a regional leader who will be approved by the NCADAC RWG. Participation on a Regional Team is expected to be decided in a consultative process involving the RWG and existing regional partnerships (e.g. ACCER, PiCCC), other groups such as RISA's or CSC's, regional thought leaders, and those with significant resources and capacity to assist the assessment. The Teams will provide a simple prospectus to the NCADAC that explains the team's approach, resources, timelines, and milestones.

In addition to the RWG and the Regional Teams, the NCA process strongly encourages participation by teams of experts and/or individuals in climate-related fields, who should notify the NCA of their interest in providing technical inputs and other assessment capacities via submission of "expressions of interest" (Appendix B). These EOIs will assist the NCADAC, RWG, and Regional Teams in coordinating across various efforts to produce information of use to the NCA.

## 1) Develop regional capacity, inventory existing reports, documents and resources, and identify potential team members and resources for the NCA process

Achieving the strategic vision for the NCA (Appendix A) requires building a network of institutions with capacity and interest in assessment activities, and the institutional resources to sustain them, in both the short and longer term. Topical reports (Figure 3) are envisioned that will be produced on a continuous basis to inform the assessment by forming the basis for the quadrennial report while being immediately available online. (See Figure 2 for the timeline).

a. Build a Regional Team based on existing regional capacity to plan ongoing activities and the regional expression of the NCA network. This network builds on the CEQ (Council for Environmental Quality) effort to define and support "regional hubs" for climate science and services. Members of the NCADAC should be invited to participate in the Regional Teams for their respective region.

b. Identify human capital and other resources to support assessment activities. Fostering ongoing capacity for assessment in the regions requires engaging entities that are already involved in climate and global change issues, and who have the capacity to support the NCA process and to expand the network of participants (See NCA Engagement Strategy). Engage new individuals and groups in the process as needed and

considering any 'Expressions of Interest' received as part of the Request for Information that has been sent out through a Federal Register Notice (Appendix B).

c. Identify additional partners from government, academic, NGO, and business that may have existing "climate assets" – e.g., regional vulnerability assessments, impact evaluations, adaptation strategies, and climate projections/scenarios within each region. Their products (technical inputs) will be considered for inclusion in the Assessment and be inventoried, evaluated and inter-compared using mechanisms defined in the NCA RFI (Appendix B) so that they can be channeled to the appropriate Regional Teams for consideration in all of their work.

This strategy to develop the ongoing assessment process is consonant with a developing strategy for effective interagency coordination of regional climate science and services (Appendix D). Developed by CEQ and OSTP, the strategy emphasizes a similar need for a sustained presence in the same eight geographical regions as the NCA (Figure 1), and that specifically includes supporting the NCA as part of its more encompassing vision for supporting and delivering climate science and services. The strategic principles, definition of success and next steps for implementation are also well aligned with the NCA strategy. Given the NCA timeline, the NCA has been chosen to lead the implementation of this larger effort amongst the Federal agencies.

## 2) Progress towards the 2013 report

The NCADAC plan is to use the 2009 Assessment report as the base from which to highlight new knowledge and activities in the region since 2009 that can be articulated through and implemented within an adaptive risk/vulnerability framework. This risk-based framework will set the priorities for the 2013 report, as well as the topical reports from the regions. Issues selected for emphasis should illustrate integrated and innovative approaches to climate issues. Subsequent topical reports could feed into the ongoing future NCA process to best align with topical reports that have been scheduled for production and with regional capacity and interest (Figure 2). However, each region needs to provide a concrete plan for the initial assessment draft (2013) report input that fits their capacity and needs, yet also effectively responds to the National requirements. The plan will be collaboratively revised with the RWG that will coordinate all of the regional chapters of the 2013 report. It is important to note that it is fully expected that some regions will be able to contribute more complete inputs to the 2013 report, and so regional coverage in that report will not necessarily be uniform (though all will have met the minimum requirements described here).

A critical first step then is for each Regional Team to develop a plan describing what will be produced as one or more 'technical inputs' to the NCADAC by March of 2012. These inputs will support the first draft of the 2013 report that is due in June of 2012 (see the attached Request for Information for guidance on components of this proposal). The NCADAC strongly encourages many types of technical inputs that will ultimately inform topical reports, which then become components of the 2013 report and subsequent additional products (Figure 3). The technical reports can encompass a wide range of sources including literature reviews, discussion papers, case studies, workshop summaries, or modeling results and interpretation of data (taking into account the assessment requirements for documentation of sources). As much as possible, Regional Teams should coordinate efforts with external teams in their region that

have expressed interest in contributing technical inputs via the Request for Information process described in Appendix B. Regional climatologies, projections, and broad outlines of socioeconomic futures will be produced and distributed by NCADAC as a starting point for consideration by the regional efforts. These can be responded to and amended as appropriate by regional entities working with the NOAA climate science lead for the Assessment, Ken Kunkel, as well as the NCADAC Working Group on Scenarios (led by Richard Moss).

### 3) Minimum Requirements for 2013 Report

As noted above, the 2013 report foundation will be an update to the 2009 Global Change Impacts Report for the region, using technical inputs that meet the NCADAC standards for review (currently being developed by a separate workgroup led by T.C. Richmond and Sharon Hays). The hope is, however, to exceed this minimum via iterative discussions between Regional Teams, the NCADAC RWG, and the Interagency National Climate Assessment Task Force (INCATF). The following list describes the minimum issues that the RWG expects to be covered in each regional chapter:

a. Identify key issues/vulnerabilities in the region and the utility and availability of relevant data;

b. Identify and engage local networks of participants and resources that can be brought to bear on the assessment topics

c. Evaluate and respond to the regional climatologies and projections provided by the NCA, in addition to existing, credible impacts reports and vulnerability assessments for facilitated discussion of indicators, needs, and scenario planning discussions

d. Discuss potential indicators of change for the region in the context of building a suite of National Indicators

e. Identify important information needs and priority topics for subsequent assessment activities

Optional additional components include (but are not limited to):

a. Outcomes from facilitated regional scenario planning discussions;

b. New science syntheses;

c. Special topic 'nested assessments' and case studies

d. Provide initial inventory and/or assessment of key regional adaptation and mitigation efforts;

e. Report on next steps in development of regional engagement networks.

This leads to the following set of priorities for NCA regional activity supporting the 2013 report:

- Focus initially on activities that will serve to inform the 2013 report;

- Identify clear goals, timelines and assignments for the regional approach to the 2013 report and beyond. Submit a synopsis of the proposed leadership, schedule, milestones and approach to Fred Lipschultz by September 1, 2011.
- Incorporate, to the extent possible, elements of a participatory scenario planning process that develops new scenarios (climate, land use, sea level rise and socio-economic) in the ongoing process (see NCADAC Working Group 3 Recommendations from May 20 meeting, (http://bit.ly/WG3recommendations).
- To the extent possible, use an integrated, risk-based framework that includes consideration of cross-regional, cross-sectoral and international stressors.

**4) Engagement activities**

Each region should organize at least one engagement activity in 2011 (a workshop, webinar, or session at an existing meeting) with the intent of determining the extent that the region can respond to the "minimum" NCA regional requirements and to plan their assessment activities beyond that report towards the next one. Components of regional conversations (including preparatory work prior to a workshop) could include:

a. Providing a context for the conversation (e.g., what is the NCA and why does it matter?);

b. Initiating community-building and engagement efforts (who is here and why? Who isn't and should be?);

c. Assessing capacity, interest and resources available for the regional assessment based on the NCA regional chapter outline (Appendix C), and discussing additional topics if there are strong feelings on this subject;

d. Identifying and prioritizing climate-related issues of concern for the region in terms of the twin components of risk – likelihood and consequence (at least qualitatively – see, for example, the planning matrices described in the Report of the Adaptation Panel of America's Climate Choices;

e. To the extent possible, discussing an approach to inventorying climate response activities in the region, with the long-term intent to start documenting effectiveness of alternative approaches. ;

f. Discussing possible NCA indicators of interest to regional participants (suggestions to be considered by in the National Indicators Strategy, especially those that support indicators that can be aggregated to a national level);

g. Through a participatory process, eliciting reactions to the regional climate history and climate outlooks, socioeconomic, sea level change and land use/land cover scenarios, etc., being developed by the NCA for the region; identify additional sources of local data to be considered;

h. Planning regional capacity building for the NCA ongoing process;

i. Identifying climate information needs for local decision makers and training priorities to help build assessment capacity within the region;

j. Identifying potential individuals and entities willing to be responsible for portions of the assessment activities in the 2013 report and in the longer term.

Workshop outcomes and other regional planning effort products and outcomes should be documented in a brief report that can be shared with the NCADAC and the Assessment staff. Any technical inputs (e.g. documents, data and reports) for use in the 2013 NCA report must be submitted for consideration by the NCADAC **by March 1, 2012** (Figure 2). During the subsequent report writing and review period, Regional and external teams providing technical inputs will be asked to respond to additional information needs from the NCADAC as it prepares the draft and final versions of the 2013 report. The RWG of the NCADAC will coordinate, via the NCA office and NCADAC members, with external groups providing technical inputs to ensure the inputs are responsive to the NCA needs. Workshop organizers are also encouraged to place workshop reports in the peer-reviewed literature when appropriate.

## Coordination of the NCA regional activities

With the envisioned distributed process for the NCA, it will be critical to coordinate the activities taking place in the regions carefully without creating obstacles for progress in any one region. The role of the NCA office and the Interagency National Climate Assessment Task Force (INCATF) will be to support this coordination and to provide requisite assistance to the Regional Teams that enable both development of the ongoing Assessment process and delivery of the products supporting the NCA. The NCA office will:

a. Develop the guidance documents for a small number of pilot regional scenario planning activities, and arrange training sessions for leaders of facilitated conversations that will help regions identify the key climate variables that they want to focus on to develop their own regional scenarios before the next Assessment report is due.

b. Establish a multi-agency and NCADAC coordinating committee that would meet regularly to ensure leads of Federal regional climate programs are fully cognizant of NCA and regional interactions.

c. Work closely with the NCADAC to deploy their knowledge of regional contacts to enhance the regional networks and to guide the regional expressions of the assessment towards a cohesive regional approach.

d. Coordinate climatology and scenario development for regions with the NCADAC subcommittee and with Regional Teams of physical and impacts-focused scientists that includes federal, university, state, local and NGO organizations to ensure the participation of scientists, resource managers, policy makers, and citizen groups.

e. Circulate Request for Information (Appendix B) to encourage non-federal groups to participate in the NCA process. Maintain a database of the Expressions of Interest (EOI) that are returned from interested parties, and communicate with them to encourage engagement in the process. Once EOIs and resulting inputs are received, the office will ensure these documents are appropriately distributed to the RWG and other relevant NCADAC working groups.

f. Keep track of regional assessment activities to promote consistency, transparency, good documentation of activities, and clear communications to the extent possible.

The NCA does not function alone, but is a component of the USGCRP and hence receives critical resources and support from its agencies. Guidance is also provided by the U.S. Global Change Research Program (USGCRP) Principals, especially via the INCATF, which is comprised of key program representatives from the agencies. The INCATF also provides coordinated agency advice and counsel to ensure consistency with agency missions, and enable and align the provision of technical support and inputs to the NCADAC, including assessment workshops.

Much of the context for this strategy arose from the outcomes of a NCA workshop concerning regional and sectoral assessments that was held November 15-17, 2010. The full report (http://www.globalchange.gov/images/NCA/regional-sectoral-report_final.pdf) summarizes inputs from ~140 participants. These ideas evolved during subsequent discussions with CEQ on a comprehensive Federal approach to regional coordination of climate science and services that includes the concept of regional "hubs."

## FOR FURTHER INFORMATION

Any questions about the content of this strategy document or the NCA regional assessments should be sent to Dr. Fred Lipschultz, Senior Scientist and NCA Regional Coordinator, US Global Change Research Program Office, 1717 Pennsylvania Ave. NW, Suite 250, Washington, DC 20006, Telephone (202) 419-3463, email flipschultz@usgcrp.gov. For more information about the NCA process, including the updates to documents, reports, newsletters, calendar of events, and information concerning the NCADAC, please visit http://assessment.globalchange.gov. Specific questions about the expectations of the NCADAC RWG should be directed (please use "NCADAC RWG" in the subject line) to its co-chairs, Gary Yohe at gyohe@wesleyan.edu and Lynne Carter at lynne@srcc.lsu.edu.

**Figure 1) NCA Regions**

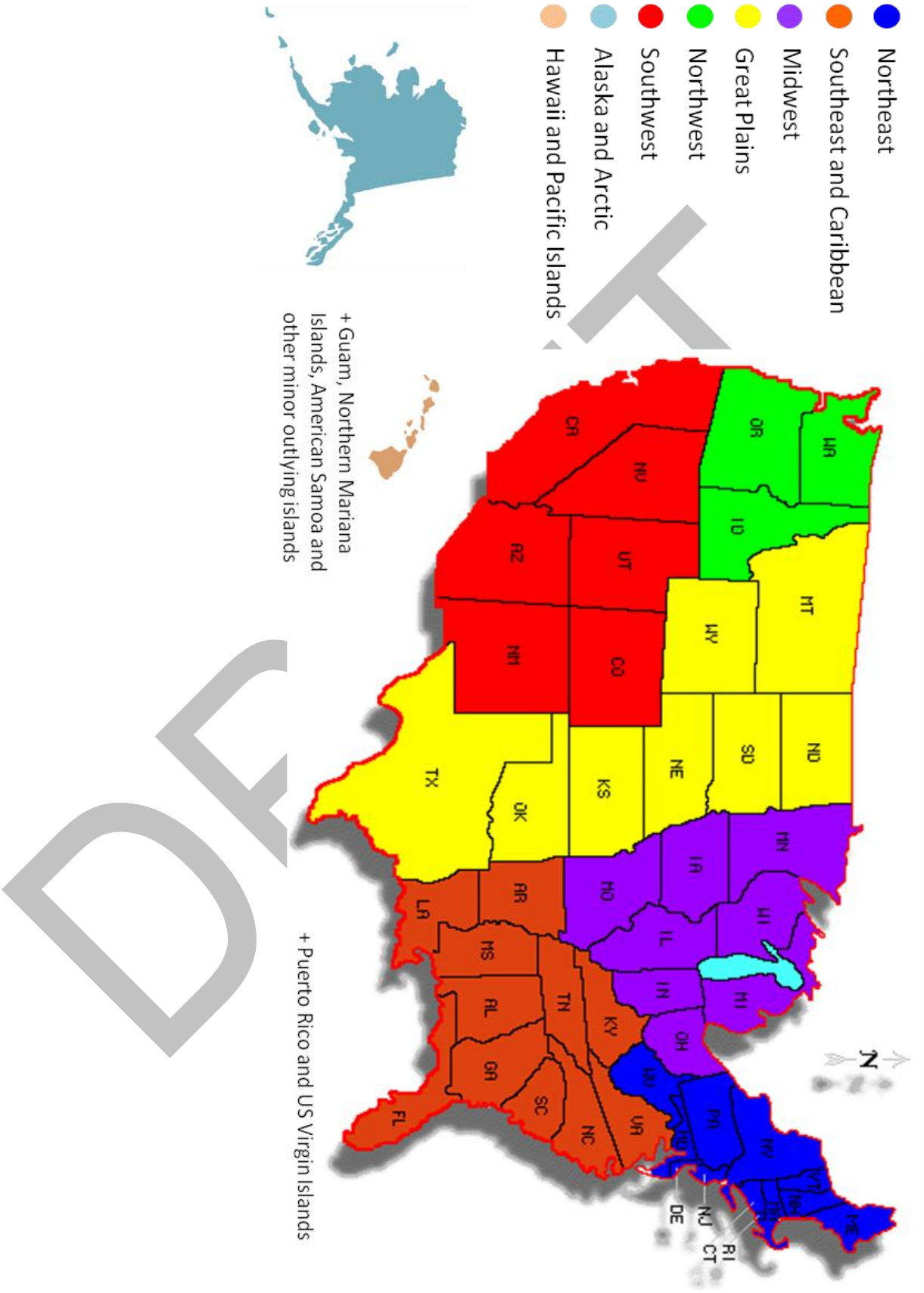


**Figure 2) NCA process timeline**

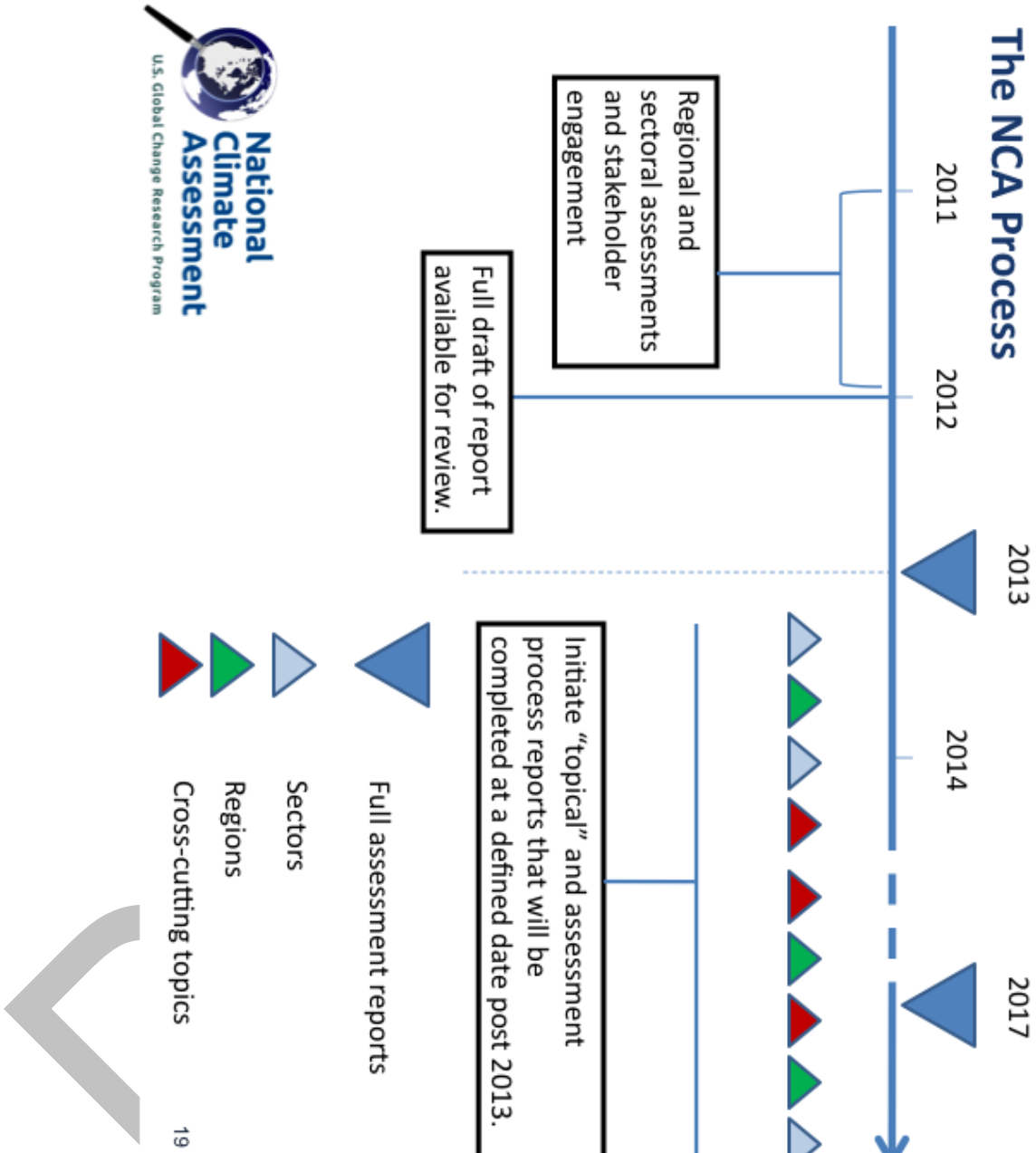


Figure 3) **NCA Process for Technical Inputs, Topical Reports and the ongoing NCA process.**

# Appendix A) NCA Strategic Plan

National Climate Assessment
Interim Strategy – Summary
5-12-11

The National Climate Assessment (NCA) will respond fully to the mandate of the Global Change Research Act of 1990 (GCRA), Section 106**, by establishing a continuing, inclusive process that produces authoritative data and reports over time. The report that will be produced in 2013 will set the stage for more comprehensive assessments in the future. The NCA will evaluate climate impacts, including both variability and trends, in a global change context (considering social, economic and ecological implications). Climate related vulnerabilities and response strategies will be documented through ongoing efforts to assess how communities and the nation as a whole can create environmentally sound and sustainable development paths.
Like previous U.S. assessments, this Assessment will evaluate the current state of scientific knowledge relative to climate impacts and trends. However, the process will differ in multiple ways from previous U.S. climate assessment efforts. For example, it will be a continuing effort rather than a periodic report-writing activity; include an evaluation of the Nation's progress in adaptation and mitigation; involve long-term partnerships with non-governmental entities; build capacity for assessments in regions and sectors; include new methods for documenting climate related risks and opportunities; and provide web-based information that supports decision making processes within and among regions and sectors of the US.
The purpose of the National Climate Assessment is to:

1. Analyze past and future trends in global change within regions and sectors, considering a full range of possible outcomes, and report on the current and anticipated effects on a number of specific sectors, including those required by the GCRA.
2. Provide Congress and the President and the Executive Agencies with sound scientific information they can use to develop policies and strategies to mitigate and adapt to climate change and variability.
3. Develop, from a variety of sources, sound, integrated and relevant scientific information about climate change, to support the public and private sectors at local, state, regional levels as they develop policies and strategies for climate change mitigation and adaptation.
4. Guide the establishment of a permanent, broad-based and inclusive assessment capacity, which will evaluate the current state of scientific knowledge of climate science, climate impacts and trends and will develop and deploy information that supports decision making processes within regions and sectors of the US; and
5. Foster effective communication on climate-related issues with a variety of audiences.

*Goal*
The overarching goal of the Assessment is to enhance the ability of the United States to anticipate, mitigate and adapt to changes in the global environment.

*Vision*

To advance an inclusive, broad-based, and sustained process for assessing and communicating scientific knowledge of the impacts, risks and vulnerabilities associated with a changing global climate in support of decision-making across the United States.

*Objectives*

To provide information and reports in the context of a continuing, inclusive National process that will:

1) synthesize relevant science and information;

2) increase understanding of what is known and not known;

3) identify needs for information related to preparing for climate variability and change and reducing climate impacts and vulnerability;

4) evaluate progress of adaptation and mitigation activities;

5) inform science priorities;

6) build assessment capacity in regions and sectors; and

7) build societal understanding and skilled use of Assessment findings.

8) recognize the global and international context of climate trends and connections between climate risk and impacts in the United States and elsewhere.

An engagement strategy that leverages science and assessment capacity across the United States, while ensuring that the NCA process and products are accessible and useful to stakeholders and the general public, is critical to this vision.

*General Principles*

The National Climate Assessment will be:

- Sustained, inclusive and integrated
- Accessible and useful to decision-makers and the general public in a wide range of sectors and at multiple levels
- Relevant for adaptation and mitigation decision needs
- Grounded in the best available science
- Authoritative and credible
- Transparent

*Outcomes*

In collaboration with a broad range of other partners, programs and initiatives at all levels and across sectors, the NCA will measurably contribute to the following outcomes:

- Ongoing analysis of scientific understanding of climate change impacts, risk, and vulnerability that is relevant to a wide range of decisions and policies.

- Enhanced timely access to Assessment-related data from multiple sources.
- Systematic evaluation of progress towards reducing risk, vulnerability, and impacts.
- A sustained and integrated research program that considers climate variability on multiple time scales as well as climate change, guides research priorities, develops indicators of change and progress, and is responsive to both GCRA and other ongoing assessment needs.
- Evaluation of the implications of alternative adaptation and mitigation policy options, including the potential for interactions among these activities.
- Information that provides the foundation for a science-based national discourse on climate change that is supports a more climate-literate citizenry.

**TEXT OF GCRA (1990) SECTION 106:

**SEC. 106. SCIENTIFIC ASSESSMENT.**
On a periodic basis (not less frequently than every 4 years), the Council, through the Committee, shall prepare and submit to the President and the Congress an assessment which--

1. integrates, evaluates, and interprets the findings of the Program and discusses the scientific uncertainties associated with such findings;
2. analyzes the effects of global change on the natural environment, agriculture, energy production and use, land and water resources, transportation, human health and welfare, human social systems, and biological diversity; and
3. analyzes current trends in global change, both human- induced and natural, and projects major trends for the subsequent 25 to 100 years.

# Appendix B) NCA Request for Information and Expression of Interest

The following document will be released soon as a Federal Register Notice for broad public awareness, so this should be considered a draft of the notice. The NCA will also be posting a supplement on the NCA website with additional information about the types of inputs and suggested best practices, and those supplements are included here for completeness.

The 'Expressions of Interest' can be submitted at any time, and receipt will be acknowledged within two weeks. The EOIs should include a timeline, clear milestones, and defined leaders and roles.

DEPARTMENT OF COMMERCE 3510-KD
National Oceanic and Atmospheric Administration (NOAA) Office of Science and Technology Policy
[Docket No. xxx]
Request for Information: Technical Inputs and Assessment Capacity Related to Regional, Sectoral, and Cross-Cutting Assessments for the 2013 U.S. National Climate Assessment (NCA) Report and the Ongoing NCA Process
**AGENCY:** Office of Oceanic and Atmospheric Research (OAR) National Oceanic and Atmospheric Administration (NOAA), Department of Commerce (DOC)
**ACTION:** Request for information
**SUMMARY:** This request for information (RFI) seeks comments and expressions of interest from the public in providing technical inputs and/or offering assessment capacity on topics related to National Climate Assessment (NCA) regional, sectoral, and cross-cutting topics proposed for the 2013 NCA report and the ongoing NCA process. More information on the NCA process, including the strategic plan, proposed report outline, and information about the National Climate Assessment Development and Advisory Committee (NCADAC), can be found at http://assessment.globalchange.gov.

A full draft of the NCA report is anticipated by mid-2012, so that scientific and subject-matter experts and the broader public will have sufficient time to review the draft and provide comments to the NCADAC on its content. A full year is planned to review and revise the report, with a planned release of the final report in mid-2013.
**ADDRESSES:** General comments and expressions of interest should be submitted via email to Emily Therese Cloyd, NCA Public Participation and Engagement Coordinator, at ecloyd@usgcrp.gov. The suggested format for the expressions of interest is described below in SUPPLEMENTARY INFORMATION
**INSTRUCTIONS:** Teams of experts and/or individuals in climate-related fields ("teams") interested in providing inputs to the NCA are encouraged to review the "Potential Technical Inputs and Assessment

Capacities" and "Suggested Best Practices" available online at http://www.globalchange.gov/what-we-do/assessment/backgroundprocess/notices and to prepare a short expression of interest (EOI) describing their anticipated inputs. All EOIs submitted in response to this notice must include a primary point of contact and contact information (phone number, mailing address, email address, website if applicable, institutional affiliation(s) if applicable). In addition, it is recommended that EOIs include the specific NCA topic(s) of interest, a short description of the input(s) the team intends to provide, and background information about the team and sponsoring organization.

Technical inputs should be provided well in advance of the anticipated release dates for the draft and final reports, with target dates for activities and inputs as follows:

- Now – Summer 2011: Expressions of interest; Initial work plans
- Now – Fall 2011: Teams conduct activities (workshops, literature reviews, modeling runs, etc.)
- December 2011 – February 1, 2012: Initial inputs, including draft reports
- March 1, 2012: Final inputs, including full reports
- After March 1, 2012: Continued development and delivery of ongoing assessment capacity

While the NCADAC welcomes inputs to the NCA, it is not able to make commitments about how these inputs will be used in the 2013 NCA report. In addition, neither the US Global Change Research Program (USGCRP) nor the NCADAC are responsible for funding the work of teams that choose to provide inputs. This notice pertains only to the underlying data, reports, other technical inputs, and assessment capacities offered to the NCA, and not to the writing of the 2013 NCA report, which is under the purview of the NCADAC. Although the emphasis in this RFI is on contributions made in time for the 2013 NCA report, contributions that are not received in time for the report will be retained and may be used in the ongoing, sustained assessment process. Some assessment contributions may be specifically targeted to such an ongoing process.

NCADAC will have access to all submissions. Ultimately, the technical inputs that meet information quality and scientific rigor standards (expected to be developed by the NCADAC in the coming months) may be posted in the publicly-accessible NCA online database. In the interim, teams are encouraged to review federal information quality requirements (available from http://www.whitehouse.gov/sites/default/files/omb/fedreg/reproducible2.pdf) for general guidance.

Responses to this notice cannot be accepted by the government to form a binding contract or issue a grant. Information obtained as a result of this request may be used by the government for program planning on a non-attribution basis. Do not include any information that might be considered proprietary or confidential.

**DATES:** EOIs describing anticipated inputs for the 2013 NCA report should be submitted no later than October 1, 2011.

**FOR FURTHER INFORMATION CONTACT:** Any questions about the content of this request should be sent to Emily Therese Cloyd, NCA Public

Participation and Engagement Coordinator, US Global Change Research Program Office, 1717 Pennsylvania Ave. NW, Suite 250, Washington, DC 20006, Telephone (202) 223-6262, Fax (202) 223-3065, email ecloyd@usgcrp.gov. For more information about the NCA process, including the strategic plan, proposed report outline, and information about the NCADAC, please visit http://assessment.globalchange.gov.

**SUPPLEMENTARY INFORMATION**

**Background.**

The National Climate Assessment (NCA) is being conducted under the auspices of the U.S. Global Change Research Program (USGCRP), pursuant to the Global Change Research Act of 1990, Section 106, which requires that: "On a periodic basis (not less frequently than every 4 years), the [National Science and Technology] Council, through the [Global Change Research] Committee, shall prepare and submit to the President and Congress an assessment which—

1. Integrates, evaluates, and interprets the findings of the [USGCR] Program and discusses the scientific uncertainties associated with such findings;
2. Analyzes the effects of global change and the natural environment, agriculture, energy production and use, land and water resources, transportation, human health and welfare, human social systems, and biological diversity; and
3. Analyzes current trends in global change, both human-induced and natural, and projects major trends for the subsequent 25 to 100 years."

Previous NCA reports have been built largely around federal agency-led studies and technical reports and have primarily drawn on the peer-reviewed literature, but have also in special cases included unique data collections or technical inputs from various outside sources. These inputs, including the agency-led Synthesis and Assessment Products (2006-2009), have informed the federal advisory committees that produced integrated, comprehensive NCA reports in 2000 and 2009. With this notice, the National Assessment Development and Advisory Committee (NCADAC) is specifically seeking contributions of technical inputs and/or offers of assessment capacity from non-federal sources.

Although the 2013 NCA report and subsequent reports will continue to depend heavily on federal agency leadership and corresponding technical reports, the NCADAC recognizes and seeks to leverage the important and growing distributed science capabilities and core competencies across the US. Indeed, it is a goal of the NCA process to increase assessment capacity both within *and outside of* the federal government. Expertise within state and local governments, non-governmental organizations, impacted communities, professional societies, and private industry represent currently untapped assets and diverse scientific and technical perspectives, especially as they relate to the value of climate and global change information for decision making. Managing and reconciling such diverse viewpoints will not be easy, but ultimately, if done correctly and well, will result in future NCA reports that are better informed and more useful for decision makers both inside and outside of federal government. The inputs requested here will become a resource to be considered by the

NCADAC and should not be confused with the chapters of the NCA report itself. All inputs received, including both technical inputs and offers of assessment capacity, will be made available to the NCADAC. The USGCRP cannot arrange for or provide funding to support the work of teams that express interest in providing inputs to the NCA.

A full draft of the NCA report is anticipated by mid-2012, so that scientific and subject-matter experts and the broader public will have sufficient time to review the draft and provide comments to the NCADAC on its content. A full year is planned to review and revise the report, with a planned release of the final report in mid-2013. Technical inputs should be provided well in advance of these deadlines, with target dates for activities and inputs as follows:

- Now – Summer 2011: Expressions of interest; Initial work plans
- Now – Fall 2011: Teams conduct activities (workshops, literature reviews, modeling runs, etc.)
- December 2011 – February 1, 2012: Initial inputs, including draft reports
- March 1, 2012: Final inputs, including full reports
- After March 1, 2012: Continued development and delivery of ongoing assessment capacity

Teams are encouraged to provide their inputs as quickly as possible (i.e., ahead of these target dates), to facilitate review by the NCADAC. Failure to provide inputs in a timely way means that the information may not be considered in the preparation of the 2013 report, although it could still be considered with respect to subsequent assessment products or be made available online as an NCA resource if documentation requirements have been met.

**Request for Expressions of Interest.** Teams of experts and/or individuals in climate-related fields ("teams") are invited to submit expressions of interest (EOI) in providing technical inputs and/or offering assessment capacity (collectively "inputs") on one or more topics related to National Climate Assessment regional, sectoral, and cross-cutting topics proposed for the 2013 report and to the ongoing NCA process. The full list of topics proposed for the report and information about the ongoing NCA process is available from http://www.globalchange.gov/what-we-do/assessment/backgroundprocess.

Teams are encouraged to maximize transparency, openness, and information quality in their inputs. Only inputs centered on documented evidence, expert elicitation, and defensible scientific foundations are likely to be considered by the NCADAC. Submissions should cite peer reviewed literature and public data sources to the maximum extent feasible. Any data that are used in these inputs need to be publicly available, the analyses and approaches should be documented, and the conclusions able to be confirmed by independent scientific evaluation processes. Ultimately, such inputs will help populate an online database of NCA-related activities and products, which will be made available to the NCADAC and to the general public. Teams are encouraged to also publish their inputs via other methods (e.g., in scientific or technical journals).

Teams interested in providing inputs to the NCA are encouraged to review the "Potential Technical Inputs and Assessment Capacities" and

"Suggested Best Practices" available online at http://www.globalchange.gov/what-we-do/assessment/backgroundprocess/notices and to prepare a short EOI (up to but not exceeding two pages, plus a list of key participants and affiliations) describing their anticipated inputs. All EOIs submitted in response to this notice must include a primary point of contact and contact information (phone number, mailing address, email address, website if applicable, and institutional affiliation(s) if applicable). In addition, it is recommended that EOIs include:

- NCA topic(s) of interest, including
  - Scope and specific range of issues to be addressed (reference NCA report outline topics and/or NCA objectives)
  - Spatial and temporal scales as appropriate
  - Plans for developing and/or using scenarios that will frame the analysis
- A short description of the specific input(s) that the team intends to provide (see "Potential Technical Inputs and Assessment Capacities" available online at http://www.globalchange.gov/what-we-do/assessment/backgroundprocess/notices), including the ability to provide adequate resources to support the creation of these inputs in a timely manner
- Background information about the team and sponsoring organization(s)
  - Team members
    - Names and affiliations
    - Short biographies (preferably 1 paragraph each, no more than 1 page per person) of key team members, including areas of expertise, previous assessment experience, and current role in the climate / global change arena
  - Sponsoring organization(s), if appropriate
    - Short history and mission
    - Current role in the climate / global change arena
    - Number and type of members, stakeholders, or general public served by the organization
    - Typical scale(s) at which the organization works and/or has expertise (international, national, regional / state, or local)
    - Type of organization (government, private sector, non-profit, academia, etc.)

EOIs may be submitted at any time and will be reviewed on a rolling basis; teams should expect acknowledgement of receipt of their EOI within two weeks of submission. EOIs describing anticipated inputs for the 2013 NCA report should be submitted no later than October 1, 2011. EOIs will be shared with the NCADAC. EOIs will not be used as pre-approval mechanisms for the submission of inputs; any feedback provided on submitted EOIs will be primarily aimed at ensuring inputs will be responsive to the needs of the NCA. EOIs will allow the NCADAC to anticipate contributions from teams and facilitate coordination and cooperation across teams that express interest in similar topics. The purpose of the EOIs and any subsequent involvement of NCA staff and the NCADAC is not to constrain the efforts of teams, but rather to improve coverage, identify gaps, and reduce redundancies amongst all

of the inputs. Ultimately, the inputs remain the work of the teams that produce them and will be presented as such to the NCADAC.

Dated: _____

_____
Mark E. Brown
Chief Financial Officer/Chief Administrative Officer
Office of Oceanic and Atmospheric Research
National Oceanic and Atmospheric Administration

_____

**SUPPLEMENTARY MATERIAL TO BE POSTED AT HTTP://ASSESSMENT.GLOBALCHANGE.GOV (NOT AS A PART OF FEDERAL REGISTER DOCUMENT)**

**Supplement to:** ***Request for Information: Technical Inputs and Assessment Capacity Related to Regional, Sectoral, and Cross-Cutting Assessments for the 2013 U.S. National Climate Assessment (NCA) Report and the Ongoing NCA Process***

Teams interested in providing inputs to the National Climate Assessment (NCA) are encouraged to review the following "Potential Technical Inputs and Assessment Capacities" and "Suggested Best Practices" prior to preparing and submitting an expression of interest (EOI). Additional information about what should be included in such an EOI and where EOIs should be submitted is available in the Federal Register Notice referenced above.

**Potential Technical Inputs and Assessment Capacities.** Teams may provide one or more types of technical inputs and assessment capacities to the NCA report and process, including those described below. Technical inputs and assessment capacities are not mutually exclusive, and it is possible (even expected) that development of assessment capacity may lead to production of tangible work products and technical inputs. While these are priority inputs, teams may suggest other technical inputs and assessment capacities. The full list of topics proposed for the report and information about the ongoing NCA process is available from http://www.globalchange.gov/what-we-do/assessment/backgroundprocess.

Technical Inputs

*1. Literature Reviews, Discussion Papers, and Other Review Papers.* Papers synthesizing recent work in relevant fields might, for example, review recent findings and advances in the field of interest, consider available assessment and synthesis methods, or highlight important questions that require additional research or analysis. One particularly useful approach would be synthesizing important recent advances in understanding of specific aspects of climate science, sectoral or regional impacts, cross-cutting topics, manager and decision maker information needs related to climate and global change, or adaptation and mitigation options.

*2. Case Studies.* Case studies might illustrate the particular set of climate change-related issues and opportunities faced by a specific community (e.g., ecological system, watershed, or human community). Case studies may also describe the specific climate and global change information decision makers and resource managers need and how they are preparing for and responding to climate change challenges through adaptation, mitigation, and other activities. These could be viewed as topical assessments that might be "nested" within a larger regional, sectoral, or cross-cutting topic.

*3. Modeling Results, Interpretation of Data, and Topical Reports.* Modeling runs, data development, and corresponding topical reports are encouraged. However, it is strongly preferred that data inputs or modeling runs be analyzed and synthesized in an accompanying report. Where such analyses are undertaken, data submissions should include metadata based on existing standards, including documentation of who collected the data when, why, and for whom; how data were compiled and analyzed; and the methods used for quality assurance and quality control.

Assessment Capacities

*1. Meetings and Workshops.* Meetings and workshops are viewed as an effective means for bringing diverse and broad-ranging scientific and technical capabilities to bear on topics and to begin synthesis across disciplinary boundaries. Reports from meetings and workshops can serve as a primary vehicle for documenting inputs from participants, and should address specific topics in the draft NCA outline and process as much as possible. In-person or virtual meetings and workshops might discuss topics such as:

- Proposed assessment products and outlines for product content
- Team building, networking, and roles and responsibilities for ongoing assessment efforts
- Risk and vulnerability assessments; assessments of adaptation capacity related to specific regions and sectors
- Prioritizing questions and issues for the region, sector, or cross-cutting topic (see draft Outline for topics)
- Identification of data sets already in use, data gaps, and suggested ways to address gaps
- Identification of existing impact assessment tools and further needs
- Identification of reports and activities already completed or in process that might contribute to the NCA
- Development of proposed indicators to be used in tracking the impacts of climate change within regions or sectors, documentation of changes in underlying vulnerabilities, and changes in climate drivers
- Building regional or sectoral scenarios for climate change
- Evaluation of possible "climate futures" for the region
- Effectiveness of existing institutional structures in responding to climate and global change challenges and capacity building needs and plans

A number of the above topics build on process workshops convened under the auspices of the INCA Task Force in 2010-2011, and teams are encouraged to use the outputs of these workshops as a basis for discussion (for more information on these workshops, please visit http://www.globalchange.gov/what-we-do/assessment/nca-activities/supporting-documents). In addition, it may be possible and desirable to include assessment activities in future professional meetings and workshops, by proposing special sessions that address particular NCA topics. Such approaches are welcome and pose opportunities to reduce the costs associated with convening separate events.

*2. Supporting Indicator Systems.* It is anticipated that physical, ecological, and societal indicators will be selected as a part of the ongoing NCA process to increase understanding of rates of change, thresholds, etc., in support of decision making. Specific foci within this topic include:

- Helping to integrate data systems and analytical tools to support NCA indicator systems
- Developing plans for maintaining indicator networks for use by NCA, including monitoring and reporting protocols

*3. Stakeholder Network Inputs.* Much of the stakeholder engagement of the NCA can be accomplished through networks of partners that extend the NCA process and products to a broader audience. Partners in this "network of networks" could work with individuals and groups to develop technical inputs, study the dissemination of climate information within populations, do social network analysis, or identify important data sources, and document resources (human and other) within professional associations and other networks that might be useful to the writing

teams within the NCADAC. Network partners may also propose education and outreach activities related to the NCA process, with associated documentation of effectiveness of alternative strategies.

**Suggested Best Practices.** The following guidance is provided to describe ways in which teams might participate, and suggests a set of "best practices" meant to ensure that inputs are produced using open, transparent processes and meet standards for quality assurance and quality control.

*1. Leadership and Roles.* EOIs should include information about who will be responsible for the processes and products that are proposed, as well as their qualifications to conduct this work. Although federal agencies will be leading technical reports for various topics, this does not preclude either some of these same individuals or other federal participants from contributing to other teams. Implicitly, members of technical input teams may be either federal or non-federal (or both). Where possible and appropriate, teams should engage stakeholders as an integral component of their efforts. A single team leader or a small number of co-leaders may serve as the liaisons to the NCA staff.

*2. Timing.* A full draft of the NCA report is anticipated by mid-2012, so that the National Research Council, scientific and subject-matter experts, and the broader public will have sufficient time to review the draft and provide comments to the NCADAC on its content. A full year is planned to review and revise the report, with a planned release in mid-2013. Technical inputs should be provided well in advance of these deadlines, with target dates for activities and inputs as follows:

- Now – Summer 2011: Expressions of interest; Initial work plans
- Now – Fall 2011: Teams conduct activities (workshops, literature reviews, modeling runs, etc.)
- December 2011 – February 1, 2012: Initial inputs, including draft reports
- March 1, 2012: Final inputs, including full reports
- After March 1, 2012: Continued development and delivery of ongoing assessment capacity

Teams are encouraged to provide their inputs as quickly as possible (i.e., ahead of these target dates), to facilitate review by the NCADAC. Work plans should include a timeline for production of technical inputs to be submitted to the NCADAC; these timelines can be further refined after conversations with NCA staff. Failure to provide inputs in a timely way means that the information may not be included in the 2013 report, though it could still be used in subsequent assessment products or be made available online as an NCA resource if documentation requirements have been met.

*3. Work Plan.* Once teams have indicated their interest in contributing to the NCA, they are encouraged to produce and share with NCA staff a more formal work plan that discusses specific roles, responsibilities, and timelines for producing inputs (particularly for larger efforts). The work plan should be shared in a timely manner (preferably within a month of submitting an EOI) and might discuss the following:

- Type of input(s) the team plans to produce
- Time line (with milestones) for developing input(s)
- Responsibilities of team members in producing input(s)
- Specific activities involved in producing inputs (e.g., workshops, data collection and analysis, draft documents with open or expert review, etc.)
- Proposed methods of engaging broader stakeholder communities in design, development, and review of input(s)
- Strategies for building and sustaining capacity to provide inputs to the NCA
- Plans to ensure information quality and transparency in process

*4. Engagement and Communication.* The strategic plan for the NCA includes a commitment to working with stakeholders to understand their perspectives and ideas, share data, build partnerships, and collaboratively design, assemble, and deliver assessment information. Teams are encouraged to engage with relevant stakeholder communities as they prepare their inputs. An additional important contribution of teams would be to create stakeholder networks that can support the 2013 NCA report and the sustained NCA process. Suggested best practices related to engagement and communication include:

- Engage critical stakeholder groups starting with credible and trusted intermediaries who can help design the engagement effort, suggest existing pathways and organizations to connect to, and find areas of mutual interest. Capitalize on existing networks and relationships, but also design ways to engage others with established and relevant expertise, as well as entrain new qualified participants to encourage capacity building.
- Workshops and meetings should be held in locations that are, to the extent possible, convenient for the targeted stakeholder or science groups. In some cases, this may mean joining the agenda of an existing meeting or activity rather than holding a stand-alone event. Some activities may have to be virtual due to funding constraints or held in conjunction with already scheduled activities (e.g., professional society meetings).
- If significant public or stakeholder engagement activities are anticipated, an engagement and communication plan should describe the ways in which the team will provide information about their process and products to a variety of stakeholder groups. Ideas for consideration include web-based shared workspaces, websites, email listservs, press releases, newsletters, minutes of meetings that are circulated to participants, development of bibliographies and inventories of resources, pre- and post-workshop reports and summaries, tailored educational materials for specific audiences, and other targeted communications.
- Teams should maintain a list of contact information for all people who participate in workshops and development of work products. For participants who have made significant contributions (e.g., as a member of the planning team, a speaker, an author of reports, etc.) this list should also include a brief biography (including their education, profession, and areas of expertise) and their role(s) in development of the product and process for the NCA.

*5. Coordination.* Efforts should be coordinated among teams working on similar sectoral and cross-cutting topics and within or in neighboring regions to avoid duplication of effort and stakeholder fatigue. The teams and the NCA staff will work together to maintain open communications on a regular and sustained basis and to ensure that the NCADAC is aware of progress relative to the work plan for the NCA as a whole.

*6. Support.* The NCA website will include a record of NCADAC-approved guidance on the topics, indicators, and information quality and knowledge management requirements for the NCA report and online database. On a time-available basis, NCA staff will provide additional guidance and information to help with coordination and maximize efficiency of teams' efforts. Teams are also encouraged to take initiative in following NCADAC activities through attendance at public meetings and regularly reviewing updates on the NCA website.

*7. Information Quality, Documentation, and Transparency.* Transparency and credibility of data and sources are of highest importance because all inputs used by the NCADAC will need to satisfy federal information quality requirements (see http://www.whitehouse.gov/sites/default/files/omb/fedreg/reproducible2.pdf). Further guidance on information quality and data management standards will be provided by the NCADAC, including additional protocols for gauging whether inputs meet standards for information quality and scientific rigor and for inclusion as a part of the NCA web portal. The NCA staff will communicate these guidelines and make them available on the NCA website to ensure that these goals are

achieved and that federal information quality standards are met. Ultimately, the NCADAC is under no obligation to use, and will likely disregard, all or part of such reports that do not conform to these standards. As appropriate, information that does not meet these standards may be removed from the NCA database of inputs.

In general, teams should expect to document a full "chain of custody" for data used to reach conclusions will need to be documented (who, what, when, where, why), as well as documentation of analytical techniques used, in any case where information comes from sources that have not already been formally peer reviewed. Teams should maintain a complete set of materials related to the production of inputs, including:

- Scoping documents (including statements of task, initial outlines, work plans, etc.) associated with the design of technical inputs
- Workshop or meeting read-ahead materials, agendas, other hand outs, presentations, post-workshop communications, and attendee lists
- Drafts of papers or reports at important milestones (e.g., review draft, final draft)
- Reviewer comments (for papers and reports)
- Evaluations (from workshop or meeting participants)

The goal of information quality, documentation, and transparency best practices is not to discourage but rather to encourage diverse viewpoints based on sound science and scientific documentation; the review process for expressions of interest and submitted inputs will support this goal.

## Appendix C. NCA 2013 Report Outline

# Outline of the 2013 NCA Report

**(additional comments appear at the end of the outline)**

**A. Introduction to the Report:**

- Purpose, background, scope
- Integrated risk-based framing
- Approaches to scenarios
- International context

**B. Climate Change Science:**

- Summary of what is known and not known, including uncertainties
- Historical trends and future projections, including changes in variability
- Focus on **what is new** since 2009 – e.g., extreme events, sea level, implications of CMIP 5 and relationship to CMIP 3;

**C. Impacts on Sectors:**

- Water resources
- Energy supply and use
- Transportation
- Agriculture
- Forestry
- Ecosystems and biodiversity (with links to ecosystem services)
- Human health

**D. Sectoral cross-cuts :**

*Comment: This category of sectoral analyses is intended to showcase the integrated nature of climate impacts, risks, and opportunities and be more consistent with a decision-based view of climate issues. The following are fast track candidates, at least three of which will be included in the 2013 report:*

1. Water /energy/land use (including agriculture, forestry)
2. Urban/infrastructure/vulnerability (part of the REQUIRED human social systems topic
3. Impacts of climate change on tribal/indigenous and native lands and resources (part of the REQUIRED human social systems topic)
4. Land use/land cover change (approached as an integrated topic, e.g. how land use decisions of all kinds increase or decrease adaptation and mitigation capacity) (REQUIRED land resources topic)
5. Rural communities, agriculture, and development (part of REQUIRED human social systems topic)
6. Impacts on biogeochemical cycles, with implications for ecosystems and biodiversity.

**E. Regions:**

*Comment: The FAC proposes eight regions (mostly the same regions as 2009 but boundaries based on states). As with sectors, start with 2009 report as the base, and update with new information. The proposed regions are:*

- Northeast
- Southeast and Caribbean
- Midwest
- Great Plains
- Southwest
- Northwest
- Alaska and Arctic
- Hawaii and Pacific Islands

**F. Biogeographical cross – cuts**

*Comment: This category of analyses is more focused on a biogeographically- or geophysically-based integrated investigations. Among the candidates are:*

- **Oceans** and marine resources (major new chapter) (includes ocean acidification)
- **Coastal zone**, development and ecosystems (case studies – SF Bay Delta, Chesapeake, Gulf Coast)
- **Drainage Basins** (case studies - Great Lakes, Colorado River, Columbia River (all include an international component) The Mississippi River and additional basins may be added as resources and interests are identified.

**G. Mitigation and Adaptation Chapter**

*Comment: The FAC has not yet identified the major focus of this chapter, but it is intended to include an assessment of the tradeoffs and interrelationships between adaptation and mitigation decisions. Potential topics to be included are:*

- Mitigation – tracking efficacy (indicators), intended and unintended consequences, cost of alternative approaches, etc. Adaptation – appropriate scale, tracking efficacy, unintended consequences
- Links between mitigation and adaptation (case studies?)
- Develop inventories of activity and risk based approaches
- Linkages with disaster preparedness, including natural hazard mitigation)
- Initiate assessments of effectiveness, e.g. design alternative approaches to data gathering and analysis
- International linkages and priorities for the ongoing Assessment

**H. An Agenda for Climate Change Science Chapter**

*Comment: his chapter would summarize all of the priority information needs (monitoring, observations, modeling, data management, vulnerability assessment, valuation, communications, education as well as climate impacts, climate drivers, etc.). These needs would be collected as an integral part of the engagement activities with regional and sectoral teams as a part of all aspects of the ongoing Assessment (e.g., within the regional, sectoral and cross-cutting evaluations; indicators; scenarios; modeling; observations, etc. gap analysis and priorities).*

**I. The NCA Long-term Process – Vision and Future Deliverables Chapter**

*Comment: The intent of this chapter is to establish time frames and milestones and approaches that reinforce the continuing nature of the Assessment process, making it easier to anticipate resources needed and priorities for the future.*

**J. On-line Appendices**

- Climate Change Science – a primer
- Frequently asked questions about climate change and variability
- Scenarios and scenario guidance
- Assessment methodologies

## Further Guidance for Developing Sections of the 2013 Report

**Sectoral Strategy:** Note that GCRA requires an analysis of the effects of global change on the natural environment, agriculture, energy production and use, land and water resources, transportation, human health and welfare, human social systems, and biological diversity; all of these topics are covered either in sectors listed above or in the cross-sectoral topics in the next section.

Sectoral reports should

- Start with the 2009 report and any relevant Synthesis and Assessment Products from the Climate Change Science Program as a base and focus on **new insights;**
- Identify where key sectoral vulnerabilities come from, **including some important inter-sectoral and underlying stresses;**
- Focus on issues of **policy relevance using a risk based framing**, expressed in terms of either likelihood or consequences or both;
- Consider international implications of climate for the sector
- Scope information that would be required for a serious future evaluation of adaptation and mitigation issues in the sector;
- To the extent feasible, the proposed sectoral approach should be vetted with relevant professional societies and interest groups; these groups should be engaged in activities that lead to long-term assessment capacity as a result of this initial 2013 report.

**Spectral cross-cut strategy:** Historically, sectoral chapters were focused within a more traditional sector-by-sector analysis of impacts, so some of this work may be more difficult to complete by 2013. A final decision to move forward on these is dependent on a clear source of funding and ability to support the assessment work in the near term. This may mean that the report on some of these topics for 2013 will be more of a progress report towards a more comprehensive future outcome.

Cross cut (integrated) assessments strategy:

- Include system descriptions focused on climate-related components,
- Important risks and key policy issues, thresholds, case studies,
- Integrated solution pathways…
- Information and research needs
- (needs more development)

**Regional Strategy:** The suggested approach would include: new historical climatologies and climate projections as developed by the Scenarios work group and work led by Ken Kunkel; key issues/vulnerabilities in the region would be identified and prioritized through a risk-management lens wherein likelihood and consequences (i.e., vulnerabilities or other indicators) are noted; indicators of interest would be identified and analyzed in terms of utility, availability of relevant data, and at least qualitative assessment of likelihood at various points in time; outcomes of initial regional scenario planning activities would be discussed; initial documentation of adaptation and mitigation efforts expressed in terms of

risk; important information needs; report on development of regional engagement networks, etc.

- Initially, focus on above questions for 2013 report based on regional workshops held during second half of 2011,
    - Initiate a scenario planning process that uses new scenarios (climate and socioeconomic) in the ongoing process.
    - Consider international climate-related issues for the region
    - All regions must have some coverage in 2013 report; some regions will be ready to make extensive use of new scenario information while others will not. Clearly identify "fast start" regions for 2013 and have a schedule for more complete efforts in other regions.
    - More detailed information can be deployed on web even if not included in official 2013 "report"

# Appendix D. The joint CEQ and OSTP strategy for regional coordination of federal agencies for delivery of climate science and services (June 15, 2001 version).

## Strategy for Strengthening Regional Coordination of Climate Science and Services

Interagency Climate Change Adaptation Task Force


### Summary

Communities across the United States need climate information and services to better plan for the future and reduce the risks of climate change to people, places, and the economy. While this need is shared, communities require climate information and services that are specific to their local issues and socio-economic, environmental, and cultural context. Many Federal and non-Federal programs are building capacity to serve these communities, and there is an opportunity to enhance these efforts through coordination.

In support of risk management decision-making in communities across the country, this strategy would strengthen regional networks to develop and provide region-specific climate science and services. Through this proposed coordination, the Federal Government and key partners can more efficiently and effectively deliver climate science and services with the capacity of existing institutions. The strategy will also support the development of the U.S. Global Change Research Program's periodic National Climate Assessment.

The proposed strategy is tied to eight existing networks of climate science and service providers that cover eight regions across the country. These eight regions align with the regional boundaries of the National Climate Assessment. One or more coordinating program(s) within each region will help to initiate a process to strengthen coordination of existing Federal and non-Federal partners to more effectively leverage expertise and resources within the network and enhance delivery of climate science and services to decision makers throughout the region.


### Vision

***Efficient and effective delivery of climate science and services to inform climate and weather-related risk management in regions and communities across the country.***

### Proposed Approach

Agencies across the Federal government recognize the value of coordinating their regional climate science and service efforts to effectively support decision makers in understanding and reducing climate change risks to people, natural resources, and the economy. Successful coordination requires an overarching and sustained national framework that recognizes region-specific issues and needs.

This strategy aims to strengthen existing regional coordination efforts, and connect these efforts with others around the Nation to improve the efficiency and effectiveness of climate science, assessments and services (this will not supersede existing efforts). For example, there is an immediate opportunity to strengthen regionally-focused, collaborative processes underway to support the U.S. Global Change Research Program's National Climate Assessment.

This proposed strategy supports the implementation of the recommendation of the Interagency Climate Change Adaptation Task Force in the 2010 Progress Report to the President that the Federal Government better coordinate Federal agency climate science, assessments, and services in each region.

***National Structure***

The proposed strategy identifies eight U.S. regions that align with those of the National Climate Assessment (see Table 1 and Figure 1). An initial interagency analysis of Federal climate science and service programs within each region indicates a natural clustering of programs around regional hub locations. Each hub hosts existing climate-related programs designed to serve the needs of regional stakeholders, coordinate regional climate programs, facilitate cooperation, leverage Federal resources and capabilities, and connect to programs in other regions. Each regional hub will serve as a convergence point for Federal and non-Federal partners throughout the region, creating a 'hub and spoke' network.

***Regional Approach***

The coordination of climate science and services within each region will be informed by existing networks, priorities, capacity, and other factors specific to each region. While guided by a shared vision, regional teams of agencies and their partners will adopt coordination approaches that best meet the needs of decision makers in the region as they respond to changing climate conditions. In many regions, coordination is already well underway. For example, in Hawaii and the Pacific Islands, the Pacific Islands Climate Change Cooperative (PICCC) and the Pacific Climate Information System (PaCIS) are working to develop joint goals to improve the understanding of climate change impacts and facilitate adaptive responses. These efforts should serve to inform the continued development of regional coordination.

***Coordination Principles***

Several principles have emerged from existing efforts to coordinate climate science and services. These include:

- Engage a broad range of stakeholders and decision-makers in collaborative, participatory processes to understand climate science and service needs.
- Leverage existing systems, institutions and networks.
- Understand regional culture and its influence in decision making. Many agencies already have trusted representatives in the community, such as extension agents or local scientists who are well-suited for outreach activities with stakeholders.
- Ensure end-users of climate science and services are well-served and see the value-added in the services provided.
- Advance coordination processes based on shared learning and joint problem-solving.

***Coordinating Program(s)***

Agencies have identified potential programs in each region that are well-suited to help initiate a process to strengthen coordination within each region (see Table 1, subject to change). These programs have substantial expertise and experience in participatory climate assessment and in delivering usable science to diverse sets of decision makers. To successfully facilitate continuous delivery of climate science and services, coordinating programs would ideally have a sustained presence in the region. Coordinating program(s) may, for example:

- Convene key programs to initiate or strengthen coordination;
- Promote broad participation of stakeholders in the region;
- Offer capacity to support regional coordination;
- Facilitate effective and non-duplicative approaches for identifying and prioritizing user needs;
- Serve as a link to coordinating programs in other regions and from the region to national level.

Effective coordination will involve all key programs in the network, including trans-boundary programs. Coordinating programs and other key partners will need to agree on roles and responsibilities essential to supporting regional coordination. To the extent possible, coordination within each region should support the National Climate Assessment, as well as meet other coordination priorities in the region.

## What is Success?

In order to successfully support and deliver climate science and services, Federal agency leaders will need to make interagency regional coordination a priority. Resources to support climate science and service programs will also need to keep pace with the growing needs of decision makers across the United States. Effective coordination will ultimately allow partners and stakeholders to:

- Readily share tools and techniques;
- Improve the consistency and compatibility of scientific data within and across regions;
- Facilitate collaborative research;
- Improve access to Federal climate services, science, tools and other resources in the region;
- Optimize use of the agencies' existing resources and avoid duplication of efforts;
- Assist with regional engagement and assessment activities of the National Climate Assessment and other similar efforts;
- More effectively engage interested parties in a collaborative and inclusive process;
- Support the development of adaptation strategies in the region that build on successful efforts and use best-available and appropriate climate information.

## Implementation

The potential coordinating programs identified by agencies (see Table 1) will initiate the implementation of this strategy in collaboration with key programs in the region that are particularly well-connected and capable of strengthening coordination. Over time, however, the programs and stakeholders in each region may define new coordinating programs and roles and

responsibilities, for example as priorities and capacities evolve or as new insights are gained through the engagement of non-Federal partners.

As a first step in implementing this strategy, coordinating programs should establish a process (or identify an existing process) for periodic convening of key regional programs. Participatory assessment processes currently underway at the regional level as part of the National Climate Assessment may provide an immediate opportunity to facilitate coordination.

## Next Steps

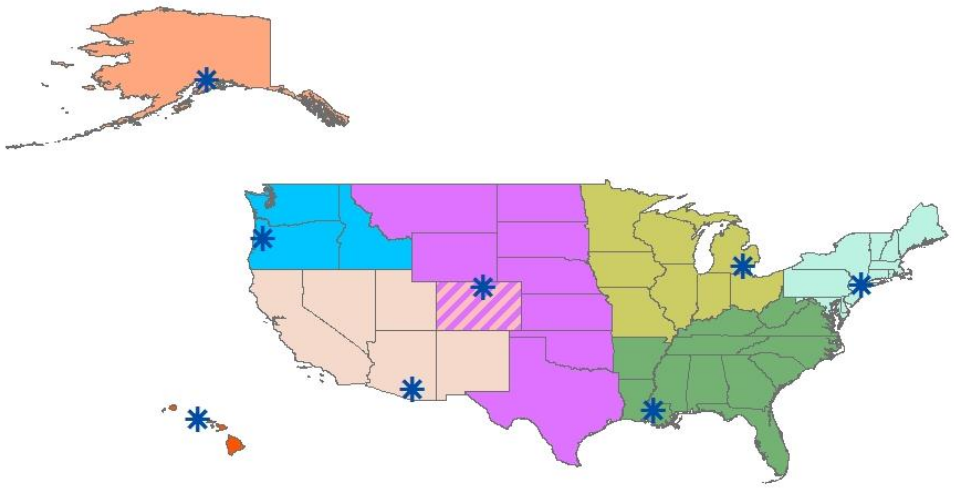
1. Agencies will continue to share information on this proposed approach with their key regional staff.
2. Agencies will continue to follow up with potential coordinating programs in each of the regions to discuss their feedback on the proposed approach and existing coordination efforts.
3. Coordinating programs identified in the table below are encouraged to convene a meeting with other programs in the region (or take advantage of upcoming opportunities) to identify regional coordination priorities, roles, and responsibilities for programs in the region, no later than Summer, 2011.
4. CEQ will continue to lead an interagency group to support coordination of climate science and services. The group will explore the possibility of periodic convening of coordinating and key programs from each region to support sharing of best practices and the effective coordination across regions.

**Table 1. Regional Hubs for Coordination of Regional Climate Science and Services**

| Region | Regional Hub | Potential Coordinating Program(s) |
|---|---|---|
| **Hawaii and Pacific Islands** | **Honolulu, HI** | Pacific Climate Information System (PaCIS) NOAA |
| | | Pacific Islands Climate Change Cooperative (PICCC) LCC, DOI |
| **Alaska and Arctic** | **Anchorage, AK** | Alaska Region Climate Services Director NOAA |
| | | Alaska Climate Change Executive Roundtable (ACCER) |
| **Pacific Northwest** OR WA ID | **Corvallis, OR** | Northwest CSC, DOI, Oregon State University with Univ. of Washington and Univ. of Idaho |
| | | Climate Decision Support Center RISA |
| **Southwest** CA NV NM UT AZ CO | **Tucson, AZ** | Southwest CSC, DOI |
| | | CLIMAS RISA, NOAA |
| **Great Plains and Intermountain** CO WY MT ND SD NE KS OK TX | **Fort Collins, CO** | North Central CSC, DOI |
| | | ARS/NRCS, Rocky Mountain Research Station USDA-FS |
| **Midwest** MN WI IL IN OH MI MO IA | **Ann Arbor, MI** | USDA-ARS (Ames, IA) |
| | | Great Lakes Integrated Science and Assessments (GLISA) RISA, NOAA (U. Michigan/ Michigan State) |
| **Southeast and Caribbean** NC SC FL VA WV TN KY GA PR AL LA MS AR | **Baton Rouge, LA** | Southern Climate Impacts Planning Program (SCIPP) RISA, NOAA |
| | | USDA-NRCS |
| **Northeast** ME NH VT MA CT RI NY PA NJ MD DE DC | **New York, NY** | GISS NYC Adaptation, NASA |
| | | Consortium on Climate Risk in the Urban Northeast (CCRUN) RISA, Columbia University |



**Figure 1. Map of the Regions and Hub Locations**



Note: Colorado is associated with both the Southwest and the Great Plains and Intermountain regions, as indicated by the striped coloring.